CLAIMS

What is claimed is:

1. A method of processing color image data, comprising:

      (a) examining the color components of a pixel in the image;

      (b) selectively applying a matrix to the color components of the pixel

to create an output color component only when the pixel is not in a dark area

of the image.

2. The method of claim 1, further comprising:

      repeating steps (a) and (b) for essentially each pixel in the image.

3. The method of claim 1, further comprising:

      blending the transition between pixels in the image that are in a dark

area and pixels in the image that are not in a dark area.

4. A method of processing color image data contained in an array of pixels,

comprising:

      selecting at least one threshold;

      (a) reading the color components of a pixel;

      (b) transforming the color components of the pixel with a matrix when

any of the color components of the pixel are greater than the threshold and

otherwise preserving the pixel.

5. The method of claim 4, further comprising:

2 repeating steps (a) and (b) for essentially each pixel in the array.

6. A method of processing color image data contained in an array of pixels,

2 comprising:

  (a) defining at least one threshold;

4 (b) defining a first and a second matrix;

  (c) reading at least 3 color components for the pixel;

6 (d) applying the first matrix to the color components of the pixel to

create an output color component when any of the color components are

8 greater than the threshold, and;

  (e) otherwise applying the second matrix to the color components of

10 the pixel to create the output color component.

7. The method of claim 6 further comprising:

2 (f) repeating steps (c) through (e) for each pixel in the image.

8. The method of claim 7 where steps (a) through (f) are repeated to create a new

2 output color component for each of the color components in the color image.

9. The method of claim 8 where a different threshold is used to create each output

2 color component in the color image.

10. The method of claim 8 where there are different matrices for creating each output

2 color component in the color image.

11. The method of claim 6 where the threshold is approximately 10 eight bit counts.

12. The method of claim 6 where the threshold is approximately 6 eight bit counts.

13. A scanner, comprising:

2   a photo-sensor array for converting an image into an electrical signal;

           an A-to-D converter to convert the electrical signal into raw digital

4   data;

           a matrix for transforming the raw digital data into corrected digital

6   data;

           the scanner configured to output the corrected digital data only when

8   the raw digital data is greater than a pre-selected value.

14. A method of processing color image data contained in an array of pixels,

2   comprising:

           defining a first threshold and a second threshold, where the first

4   threshold is larger than the second threshold;

           defining a first and a second matrix;

6   (a) reading the color components of a pixel;

           (b) applying the first matrix to the color components of the pixel when

8   any color component is greater than the first threshold;

           (c) applying the second matrix to the color components of the pixel

10   when all the color components of the pixel are less than the second threshold,

     and;

12   (d) otherwise applying an interpolation between the first and second

matrix to the color components of the pixel;

14   repeating steps (a) through (d) for each pixel in the array.

15. A method of processing data contained in an array of pixels, comprising:

2   defining a threshold;

      defining a range around the threshold, the range having a top end and a

4   bottom end;

      defining a matrix;

6   (a) reading the color components of a pixel;

      (b) applying the matrix to the color components of the pixel when any

8   of the color components are above the top of the high end;

      (c) modifying the color components of the pixel by interpolation when

10 all of the color components are below the top end of the high range and at

    least one color component is above the bottom end of the low range, and;

12   otherwise preserving the pixel.

16. The method of claim 15 further comprising:

2   repeating steps (a) through (c) for each pixel value in the array.

17. The method of claim 16 where steps (a) through (c) are repeated to create a new

2   output color component for each of the color component in the color image.

18. The method of claim 17 where a different threshold is used to create each output

2   color component in the color image.

19. The method of claim 17 where there are different matrices for creating each

2   output color component in the color image.

20. The method of claim 15 where the threshold is approximately 10 eight bit counts.

21. The method of claim 15 where the range is approximately 2 eight bit counts.

22. The method of claim 15 where the threshold is approximately 6 eight bit counts.

23. A scanner, comprising:

2   a photo sensor array for converting an image into an electrical signal;

                an A to D converter to convert the electrical signal into raw digital

4   data;

                a first matrix and a second matrix, both matrixes for transforming the

6   raw digital data into corrected digital data;

                the scanner configured to create the corrected digital data by selecting

8   between the first and second matrix as a function of the raw digital data value.

24. A computer readable medium containing a program for adjusting the color data in

2   an image, comprising:

                a matrix;

4   the program configured to modify the data from a color component of

the color image using the matrix only when the data from the color component

6   is above a predetermined value.

25. A camera, comprising:

2   a photo sensor;

a lens system that forms an image on the photo sensor;

4   a matrix for mapping image data;

a processor configured to map image data only when the image data

6   exceeds a predetermined value.

26. A camera, comprising:

2   a photo sensor;

a lens system that forms an image on the photo sensor;

4   a means for mapping the image data;

a processor configured to map the image data only when the image

6   data exceeds a predetermined value.

27. A method of processing color image data contained in an array of pixels,

2   comprising:

(a) defining at least three thresholds;

4   (b) defining a first and a second matrix;

(c) reading at least 3 color component for a pixel;

6   (d) applying the first matrix to the color components of the pixel to

create an output color component when the first color component is larger than

8   the first threshold or the second color component is larger than the second

threshold or the third color component is larger than the third threshold, and;

10   (e) otherwise applying the second matrix to the color components of

the pixel to create the output color component;

12   (f) repeating steps (c) through (e) for each pixel in the array.